Item No. 710S
Bicycle Racks

710S.1 Description

This item shall govern Class II and Class III bicycle racks and associated support medium as indicated on the Drawings.

A Class II bicycle rack shall be a rack where both wheels and the frame of a bicycle can be secured with one (1) user-supplied lock without the requirement for wheel removal. The design, type and capacity of a Class II bicycle rack shall be approved by the Engineer or designated representative

A Class III bicycle rack shall be a rack where both one wheel and the frame can be secured with a user supplied lock (see Standard Detail 710S-1, "Class III Style Bicycle Parking"). The Class III rack shall consist of either a single U/Hoop (Rack 1), multiple inverted U/Hoop (Rack 2), single post (Rack 3), or other Rack approved by the Engineer or designated representative.

This specification is applicable for projects or work involving either inch-pound or SI units. Within the text, the inch-pound units are given preference followed by SI units shown within parentheses.

710S.2 Submittals

The submittal requirements of this specification item include:

A. Class (i.e. II or III) Type and capacity of bicycle rack (i.e. number of bicycles served).

B. Fabrication and installation details, color and finish of the rack(s).

C. Support medium (i.e. existing slab, new pad, concrete filled excavation, etc.) and details of installation.

D. Complete manufacturer's warranty against defects for a period not less than one year from date of installation.

710S.3 Materials

A. Steel elements.

All steel shall be ASTM A-36 1010-1018 low carbon prime steel and the screws, nuts and bolts shall be tamper proof and plated with commercial zinc. The bicycle racks shall be hot dipped galvanized (ASTM A 123) unless the Drawings indicate that the rack assembly shall be provided in a specific color with a polyester-vinyl coated finish, a powder coated finish, or a polyvinyl thermoplastic finish.

B. Portland Cement Concrete

Portland cement concrete shall be Class A conforming to Specification Item No. 403S, "Concrete for Structures" or Specification Item No. 407S, "Fibrous Concrete".

C. Reinforcement

Reinforcement shall conform to Specification Item No. 406S, "Reinforcing Steel" or Specification Item No. 407, "Fibrous Concrete".

D. Expansion Joint Materials

Expansion joint materials shall conform to Specification Item No. 408, "Expansion Joint Materials".

E. Membrane Curing Compound

Membrane curing compound shall conform to Specification Item No. 409, "Membrane Curing".

710S.4 Construction of Racks

A. Class II Bicycle Rack.

The Class II Rack shall consist of a locking system, which will secure both bicycle wheels and the frame with one (1) lock without the removal of either wheel.

B. Class III Bicycle Rack.

1. The Class III Rack Type 1 (Standard Detail 710S-1, sheet 1 of 3) shall consist of a one piece welded inverted U/Hoop assembly of Schedule 40 steel pipe with an minimum outside diameter (OD) of 1.5 inches (38 mm) on a minimum .25” (6.35 mm) thick base plate.

2. The Class III Rack Type 2 (Standard Detail 710S-1, sheet 2 of 3) shall consist of a single Schedule 40 steel pipe with an minimum outside diameter (OD) of 2 3/8 (60 mm) set in Portland cement concrete below the ground surface as indicated on the Drawings. The steel pipe shall be topped with a 7 1/2 inch (190 mm) polymer molded sphere that is secured with a hardened steel pin.

3. The Class III Rack Type 3 (Standard Detail 710S-1, sheet 3 of 3) shall consist of a one piece welded inverted U/Hoop assemble of Schedule 40 steel pipe with an minimum outside diameter (OD) of 2 3/8 inches (60 mm) supported with a minimum .25” (6.35 mm) thick circular base plate at one end of the rack and an in ground anchor mount on the other end.

4. The base plates can be round, square, or rectangular. If round, the diameter of the base plate must be at least 6” (150 mm) with a 4.5” (114 mm) bolt circle. If square, the base plate must be at least 4” by 4” (100 mm by 100 mm). If rectangular, the base plate must be 6” by 2” (150 mm by 50 mm). All base plates must be pre-drilled with two 3/8” (9.5 mm) diameter holes per plate for mounting. Each entire unit shall be hot dip galvanized after fabrication.

C. The bicycle racks shall be supported as indicated on the Drawings. The Class II racks and the Class III Rack Type 1 shall be supported on either existing or newly placed Portland cement concrete slabs. The Class III, Rack Types 2 and 3, can be placed on either existing or new slabs; however, these racks require additional underslab support of the steel pipe with p.c. concrete encasement as indicated in Standard Detail 710S-1 (sheets 2 and 3).

The construction of the new slabs shall be completed in accordance with Standard Specification Item Number 432S, “Concrete Sidewalks”. Unless noted otherwise on the Drawings, the slab shall be 4 inches (100 mm) in thickness.

710S.5 Installation of Bicycle Racks

Bicycle parking racks shall be installed in existing paver sidewalks, new paver sidewalks and concrete sidewalks in accordance with Standard Details 710S-3, 710S-4 and 710S-5, respectively.

710S.6 Measurement

Bicycle Parking Racks shall be measured per each, complete and in place and any new p.c. concrete slab will be measured by the square foot (square meter: 1 square meter is equal to 10.764 square feet) of surface area of "Bicycle Parking Concrete Pad".

710S.7 Payment

The installation of Bicycle Parking Racks, as described by this Specification Item, will be paid for at the unit bid price per each. The construction of a p.c. concrete bicycle-parking pad will be paid for at the unit bid price per square foot for "Concrete Bicycle Parking Pad".

The unit bid prices shall include full compensation for the specified equipment items; the excavation, removal and disposal of existing sidewalk, location, placement and installation of parking racks; all materials, including all steel pipe and plate, screws, nuts and bolts, reinforcing steel and concrete; placing and finishing the concrete pad, and all labor, tools, and incidentals necessary to complete the work.

Payment will be made under:

Pay Item No. 710S-A:	Class II Bicycle Rack	Per Each.
Pay Item No. 710S-B:	Class III, Type 1 Bicycle Rack	Per Each.
Pay Item No. 710S-C:	Class III, Type 2 Bicycle Rack	Per Each.
Pay Item No. 710S-D:	Class III, Type 3 Bicycle Rack	Per Each.
Pay Item No. 710S-E:	Class III, Other Type Bicycle Rack	Per Each.
Pay Item No. 710S-F:	4 inch Concrete Bicycle Parking Pad	Per Square Foot.

End

SPECIFIC CROSS REFERENCE MATERIALS
Standard Specification Item Number 710S, “Bicycle Racks”

City of Austin Standard Specifications

Designation	Description
Item No. 403S	Concrete for Structures
Item No. 406S	Reinforcing Steel
Item No. 407S	Fibrous Concrete
Item No. 408	Expansion Joint Materials
Item No. 409	Membrane Curing

Item No. 410	Concrete Structures
Item No. 432S	Concrete Sidewalks

SPECIFIC CROSS REFERENCE MATERIALS - Continued
Standard Specification Item Number 710S, "Bicycle Racks"

City of Austin Standard Details

Designation	Description
710S-1	Class III Style Bicycle Parking
710S-2	Class II Style Bicycle Parking
710S-3	Bicycle Rack Installation in Concrete Paver Sidewalk – Alternate 1
710S-4	Bicycle Rack Installation in Concrete Sidewalk – Alternate 1
710S-5	Bicycle Rack Installation in Sidewalk – Alternate 2

American Society for Testing and Materials (ASTM)

Designation	Description
ASTM A 36	Specification for Structural Steel
ASTM A 123	Specification for Zinc (Hot-Dipped Galvanized) Coatings on Iron and Steel Products

RELATED CROSS REFERENCE MATERIALS

City of Austin Standard Contract Documents

Designation	Description
00700	General Conditions
01500	Temporary Facilities
01550	Public Safety and Convenience

City of Austin Standard Specifications

Designation	Description
Item No. 102S	Clearing and Grubbing
Item No. 104S	Removing Concrete
Item No. 110S	Street Excavation
Item No. 111S	Excavation
Item No. 132S	Embankment
Item No. 201S	Subgrade Preparation
Item No. 405	Concrete Admixtures
Item No. 406	Reinforced Steel Tolerances
Item No. 411	Surface Finishes for Concrete
Item No. 602S	Sodding for Erosion Control
Item No. 604S	Seeding for Erosion Control
Item No. 610S	Preservation of Trees and Other Vegetation
Item No. 642S	Silt Fence

Texas Department of Transportation: Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges

Designation	Description
Item 420	Concrete Structures
Item 421	Hydraulic Cement Concrete
Item 427	Surface Finishes for Concrete
Item 437	Concrete Admixtures
Item 440	Reinforcing Steel

American Society for Testing and Materials (ASTM)

Designation	Description
A-496	Standard Specification for Steel Wire, Deformed for Concrete Reinforcement
A-615/615M	Standard Specification for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement